



SAFETY HEALTH AND  
ENVIRONMENTAL AFFAIRS

MAY 06 1993

ORIGINAL

# MATERIAL SAFETY DATA SHEET

PRODUCT

NALCO 39M CORROSION INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

## SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALCO 39M CORROSION INHIBITOR

DESCRIPTION: An aqueous solution of borates, silicates, nitrates, nitrites and mercaptobenzothiazole

NFPA 704M/HMIS RATING: 2/2 HEALTH 0/0 FLAMMABILITY 0/0 REACTIVITY 0 OTHER  
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

## SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 14 for the nature of the hazard(s).

INGREDIENT(S)	CAS #	APPROX. %
Sodium nitrite	7632-00-0	1-5
Sodium mercaptobenzothiazole	2492-26-4	1-5
Sodium tetraborate	1330-43-4	1-5

## SECTION 3 PRECAUTIONARY LABEL INFORMATION

WARNING: Harmful or fatal if swallowed in large doses. Contains sodium nitrite. Causes blood system disorders when swallowed. Do not take internally. May cause irritation to skin and eyes. Avoid contact with eyes, and prolonged or repeated contact with skin.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

## SECTION 4 FIRST AID INFORMATION

EYES: Flush with water for 15 minutes. Call a physician.  
SKIN: Flush with water for 15 minutes.  
INGESTION: Induce vomiting. Give water. Call a physician at once.  
INHALATION: Remove to fresh air. Treat symptoms. Call a physician.

NOTE TO PHYSICIAN: Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.



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## SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin

EYE CONTACT: Can cause mild, short-lasting irritation.  
SKIN CONTACT: Can cause mild, short-lasting irritation.  
INGESTION: Can cause kidney damage. Can be harmful or fatal.

SYMPTOMS OF EXPOSURE: Sodium nitrite. Causes formation of methaemoglobinaemia leading to cyanosis and possible death if ingested. Repeated ingestion of small amounts causes blood pressure to drop, rapid pulse, headaches and visual disturbances. Causes central nervous system effects (eg. headaches, tremors, drowsiness and convulsions).

AGGRAVATION OF EXISTING CONDITIONS: Sodium nitrite. Pregnant women are particularly sensitive to methaemoglobinaemia.

## SECTION 6 TOXICOLOGY INFORMATION

ACUTE TOXICITY STUDIES: Acute toxicity studies have not been conducted on this product, but acute studies have been conducted on a similar product. The results are shown below.

ACUTE ORAL TOXICITY (ALBINO RATS): LD50 = 3,362 mg/kg

PRIMARY SKIN IRRITATION TEST (ALBINO RABBITS):  
SKIN IRRITATION INDEX DRAIZE RATING: 0.5/8.0 Minimal irritation

PRIMARY EYE IRRITATION TEST (ALBINO RABBITS):  
EYE IRRITATION INDEX DRAIZE RATING: 16.7/110.0

CHRONIC TOXICITY RESULTS: Sodium nitrite. Experimental animal studies have shown reproductive effects in the offspring of the treated parents. These effects are non-transmissible. Bacterial assay mutation studies have been positive. Tumorigenic data is equivocal.

Sodium mercaptobenzotriazole. Chronic feeding laboratory animal study of 120 ppm in the diet showed no effects.

## SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Clear to hazy deep red	FORM: Liquid	ODOR: None
DENSITY: 9.3-9.7 lbs/gal.		
SOLUBILITY IN WATER: Completely		
SPECIFIC GRAVITY: 1.12-1.16 @ 77 Degrees F		ASTM D-1298
pH (NEAT) = 11.1-11.8		ASTM E-70



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## SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

( CONTINUED )

FREEZE POINT:	-20 Degrees F	ASTM D-1177
BOILING POINT:	212 Degrees F @ 760 mm Hg	ASTM D-86
FLASH POINT:	None	

NOTE: These physical properties are typical values for this product.

## SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: None

EXTINGUISHING MEDIA: Not applicable

UNUSUAL FIRE AND EXPLOSION HAZARD: May evolve NOx under fire conditions.

## SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: N-nitrosamines, many are cancer causing agents to laboratory animals, may be formed when certain amines are mixed with nitrous acid, organic or inorganic nitrites or atmospheres with high nitrous oxide concentrations.

Avoid contact with strong acids (eg. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) which can generate heat, splattering or boiling and the release of toxic fumes.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, CO2, NOx may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

## SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: Respiratory protection is not normally needed since the volatility and toxicity are low.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a pressure-demand, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended.

PROTECTIVE EQUIPMENT: Use impermeable gloves and chemical splash goggles when attaching feeding equipment, doing maintenance or handling product. Examples of impermeable gloves available on the market are neoprene, nitrile, PVC, natural rubber, viton and butyl (compatibility studies have not been performed).

The availability of an eye wash fountain and safety shower is recommended.

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## SECTION 10 PERSONAL PROTECTION EQUIPMENT

( CONTINUED )

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

## SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (708-920-1510)

### SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 14.

DISPOSAL: If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

As a non-hazardous liquid waste, it should be solidified with stabilizing agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to an industrial waste landfill. A non-hazardous liquid waste can also be deep-well injected in accordance with local, state and federal regulations.

## SECTION 12 ENVIRONMENTAL INFORMATION

CHEMICAL OXYGEN DEMAND (COD): 67,000 mg/L

TOTAL ORGANIC CARBON (TOC): 37,000 mg/L

If released into the environment, see CERCLA in Section 14.

## SECTION 13 TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME/HAZARD CODE - HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
ORM-E NA 9188  
CONTAINS - SODIUM NITRITE



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## SECTION 14 REGULATORY INFORMATION

The following regulations apply to this product.

### FEDERAL REGULATIONS:

OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:

Based on our hazard evaluation, the following ingredients in this product are hazardous and the reasons are shown below.

Sodium nitrite - Chronic human effects (refer to Section 6)

Sodium mercaptobenzothiazole - Sensitizer

Sodium tetraborate = TWA 1 mg/m<sup>3</sup> ACGIH/TLV

Sodium tetraborate = TWA 10 mg/m<sup>3</sup> OSHA/PEL

CERCLA, 40 CFR 117, 302:

This product contains sodium nitrite, a Reportable Quantity (RQ) substance and if 2,000 pounds of product are released, it requires notification to the NATIONAL RESPONSE CENTER, WASHINGTON, D. C. (1-800-424-8802).

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986

(TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):

This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):

Our hazard evaluation has found this product to be hazardous. The product should be reported under the following EPA hazard categories:

XX Immediate (acute) health hazard

XX Delayed (chronic) health hazard

-- Fire hazard

-- Sudden release of pressure hazard

-- Reactive hazard

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):

This product does not contain ingredients on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA):

The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).



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## SECTION 14 REGULATORY INFORMATION

( CONTINUED )

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:  
Consult Section 11 for RCRA classification.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15  
(formerly Sec. 307), 40 CFR 116 (formerly Sec. 311):

This product contains the following ingredient covered by the Clean Water Act:

Sodium nitrite - Section 311

CLEAN AIR ACT, Sec. 111 (40 CFR 60), Sec. 112 (40 CFR 61, 1990 Amendments):  
This product does not contain ingredients covered by the Clean Air Act.

### STATE REGULATIONS:

#### CALIFORNIA PROPOSITION 65:

This product does not contain any chemicals which require warning under California Proposition 65.

#### MICHIGAN CRITICAL MATERIALS:

This product does not contain ingredients listed on the Michigan Critical Materials Register.

### STATE RIGHT TO KNOW LAWS:

The following ingredient(s) are disclosed for compliance with State Right To Know Laws:

Sodium mercaptobenzothiazole	2492-26-4
Sodium metasilicate	6834-92-0
Sodium nitrate	7631-99-4
Sodium nitrite	7632-00-0
Sodium tetraborate	1330-43-4
Water	7732-18-5

### INTERNATIONAL REGULATIONS:

This is a WHMIS controlled product under The House of Commons of Canada Bill C-70 (Class D2B). The product contains the following substance(s), (with CAS # and % range) from the Ingredient Disclosure List or has been evaluated based on its toxicological properties, to contain the following hazardous ingredient(s):

Sodium nitrite	7632-00-0	1-5
Sodium mercaptobenzothiazole	2492-26-4	1-5
Sodium tetraborate	1330-43-4	1-5



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### SECTION 15 ADDITIONAL INFORMATION

Nalco internal number F08508

### SECTION 16 USER'S RESPONSIBILITY

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to ensure safe workplace operations. Please consult your local sales representative for any further information.

### SECTION 17 BIBLIOGRAPHY

ANNUAL REPORT ON CARCINOGENS, U.S. Department of Health and Human Services, Public Health Service, PB 33-135855, 1983.

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CHEMICAL HAZARDS OF THE WORKPLACE, Proctor, N. H., and Hughes, J. P., eds., J. P. Lipincott Company, N.Y., 1981.

DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, Sax, N. Irving, ed., Van Nostrand Reinhold Company, N.Y., 6th edition, 1984.

IARC MONOGRAPHS ON THE EVALUATION OF THE CARCINOGENIC RISK OF CHEMICALS TO MAN, Geneva: World Health Organization, International Agency for Research on Cancer, 1972-1977.

PATTY'S INDUSTRIAL HYGIENE AND TOXICOLOGY, Clayton, G. D., Clayton, F. E., eds., John Wiley and Sons, N. Y., 3rd edition, Vol. 2 A-C, 1981.

REGISTRY OF TOXIC EFFECTS ON CHEMICAL SUBSTANCES, U.S. Department of Health and Human Services, Public Health Service, Center for Disease Control, National Institute for Occupational Safety and Health, 1983 supplement of 1981-1982 edition, Vol. 1-3, OH, 1984.

Title 29 Code of Federal Regulations Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS IN THE



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## SECTION 17 BIBLIOGRAPHY

( CONTINUED )

WORKROOM ENVIRONMENT WITH INTENDED CHANGES, American Conference of  
Governmental Industrial Hygienists, OH.

PREPARED BY: Ricky A. Stackhouse PhD., Toxicologist

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